report to the association that sent them before any general public announcement of the findings of the committee could be made. If this idea were logically carried out, it would be impossible for the commission ever to accomplish anything. The various associations represented meet at different times of the year, their meetings practically covering the whole year. Before all the members could report to their respective associations, a year would pass by and part of the report become invalid. The delay is in every respect unfortunate. Star-chamber methods are out of place in our country at this time. Everything is to be gained and nothing lost by openness and frankness in all educational discussions. The only reasonable inferences from the committee's desire for secrecy are that they have done something of which they are ashamed, or have done nothing, of which they are ashamed.

CURRENT EDUCATIONAL LITERATURE

NUMBER AND ITS APPLICATION PSYCHOLOGICALLY CONSIDERED. By D. E. PHILLIPS. *The Pedagogical Seminary*, October 1897.

TEACHERS in general, and teachers of arithmetic in particular, have at least one trait in common with those whom the nature-study people call "our little neighbors." In the poultry close, when one fowl runs to a certain spot and pecks at the earth, forthwith the whole colony rushes to this new Klondike, and all begin to peck away vigorously. After a little even a hen's intelligence is acute enough to see that this spot is just as barren as is the rest of the enclosure, and so one by one the harem disperses, and assumes a peripatetic air until another fowl cry of "Eureka" is raised.

These cries and rushes, and false alarms do much good in the poultry yard. They give abundant exercise, and they make it certain that the field is well explored. Occasionally some philosophic fowl may take a perch and survey the whole field, and discover some spot which promises a genuine food supply. Then a real contribution to the stock of knowledge is made, but such cases are rare.

In arithmetic method the hue and cry has often been raised, and the mad rush has followed, and the excitement has been intense, until someone has asked, "Is this spot any less barren than the rest of the field?" and then one by one the assembled crowd vanishes away.

Such was the case when Grube was discovered, a man who had only two original ideas in his system, both bad. Such is the case every few years in Germany, where the soil is favorable to the sprouting of pedagogical schemes. One has but to run through the pages of some work like Unger's *Die Methodik der praktischen Arithmetik in historischer Entwickelung*, to appreciate how periodic is this discovery of the panacea. We have similar periods in America.

Mr. Phillips is one of the rare investigators who sees beyond his own hobby. His hobby is there, and it is a good one and a broad one, and one that is psychologically grounded. But he has made a genuine effort to survey the field so far as it relates experimental psychology to number teaching, and he submits a thesis upon this subject which is more worthy of attention than any which has appeared in some time.

The thesis begins with a review of those experiments in psychology which throw light upon the question, a review which seems like an oasis in the desert to those who have to struggle through the current literature of the subject. The first step which the author discovers in the development of the number concept is the formation of a "series-idea." Which of the senses plays the leading part in this step he does not assert, showing again his superiority over those who are positive that it is this sense or that, and only this or that. For example, Preyer maintains that the sense of hearing plays the important part, Nichols favors the sense of touch, Pestalozzi, the sense of sight, Tillich, the sense of sight with the ratio idea prominent, and so on.

The series idea is then set forth at length, together with the results of a number of interesting experiments upon children, and of the study of savages and mathematical prodigies. These results establish the fact that "the naming of the series generally goes in advance of its application to things, while the tendency of modern pedagogy has been to reverse this." The conclusion which the author draws from his experiments is that "counting is fundamental, and counting that is spontaneous, free from sensible observation and from the strain of reason." Here he goes a step farther than Tanck and Knilling in a movement which has very much to recommend it.

The author's treatment of the ratio idea is such as to make the article one which all primary teachers, especially such as are attracted to this rejuvenated vagary, should read.

The breadth of view which is apparent throughout the investigation may be judged from the following paragraph: "The diversity of human intellects, human needs, human environments, child's spontaneity, psychic activity, and especially mental phenomena in dealing with number, demand that neither the teaching nor the text should be dominated by a single idea." This advice is worth a great deal to those who feel that arithmetic cannot be taught well unless somebody's "method" is fitted like a strait-jacket upon the child's soul.

The closing historical survey is too fragmentary to be of value, and the bibliography, while suggestive, not only contains several references of little use to anyone, but omits a number of standard works which teachers should always have upon book shelves.

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